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| 10/679,406 | 10/07/2003 | Kiyoshige Muraoka | 1403-0256P | 5490 |

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| EXAMINER |
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KNABLE, GEOFFREY L

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| ART UNIT | PAPER NUMBER |
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1791

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| NOTIFICATION DATE | DELIVERY MODE |
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11/29/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary

Application No.

10/679,406

Applicant(s)

MURAOKA ET AL.

Examiner

Geoffrey L. Knable

Art Unit

1791

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,6,9-11,13,14 and 19-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,6,9-11,13,14 and 19-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Claims 1, 6, 9-11 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaido et al. (US 6,136,123) taken in view of at least one of [Kotani et al. (US 5,700,560) or Kotani et al. (US 6,316,093)] and further in view of WO 98/56598 to Feeney et al.

These references are applied for the same reasons as set forth in the last office action.

3. Claims 13, 14 and 20-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kaido et al. (US 6,136,123) taken in view of at least one of [Kotani et al. (US 5,700,560) or Kotani et al. (US 6,316,093)] and WO 98/56598 to Feeney et al. as applied above, and further in view of Kresge et al. (US 5,576,372) and Hopkins et al. (US 2001/0009948) as applied in the last office action.
4. Applicant's arguments and accompanying declaration under 37 CFR 1.132 filed 9-10-2007 have been fully considered but they are not persuasive and insufficient to overcome the rejections of record.

With respect to Kaido et al., it is pointed out by applicant that this reference does not disclose or suggest use of a layered compound as claimed. While it is not disputed that Kaido et al. does not suggest a layered filler in the resin film, such was considered to have been obvious to the ordinary artisan in view of the secondary references to Kotani et al. for the reasons already of record. It is also argued that Kaido et al. fails to disclose combining a gas barrier layer and an innerliner layer and that it requires the

presence of a takifier-adhesive (reference being made to Kaido's claim 1 at col. 18, line 3), which adhesive layer "is not required by the present invention." First, as to the takifier adhesive, it is again stressed that claim 1 does not define over using an adhesive layer *and in fact claim 6 explicitly requires it*. The argument that "[a] corresponding adhesive layer is not required by the present invention" is thus not commensurate with most of the claims (except claim 19). Further, in any event (and for claim 19), note again also that Kaido indicates that the adhesive can be provided at the splice "and/or" the joining surfaces of the film and carcass - in other words, it explicitly teaches that the adhesive can be applied *only* at the splice portion (e.g. col. 2, lines 13-15; example 13), *direct bonding of the rest of the layer therefore being clearly disclosed and contemplated*. Therefore, even though most of the claims do not exclude the presence of an adhesive layer, Kaido even suggests embodiments both with and without adhesive.

As to the presence of an inner liner layer in combination with the film, it is again noted that it is not clear that Kaido et al. fails to suggest this, note being taken of the reference to the rubber inner surface suitably being formed from halogenated butyl rubber (see col. 4, lines 44-50, such being the compound used in typical tire inner liners as is well known by the ordinary artisan - e.g. note col. 1, lines 17-22 of Kaido et al.) as well the reference to an inner liner layer at col. 8, lines 61+. Further, in any event, WO '598 to Feeney is directed to a similar tire that includes a coated gas barrier film on the inner surface and in particular suggests an understanding in this art of the *suitability of both application to a butyl innerliner as well as coating of the carcass rubber directly*

without an innerliner (esp. pages 22-24), this being considered to render it obvious to provide the Kaido et al. film in place of or in addition to the butyl innerliner and thus application to a typical butyl liner that contains predominantly butyl rubber, as is well known in this art, would have been obvious (if not deemed to be suggested by Kaido) and would have led to only the expected and predictable results.

With respect to the Kotani et al. references, it is argued that they relate to gas barrier resin compositions used for the preservation of foods and that the applications mentioned are far removed from tires and therefore cannot be combined with the tire references. A selected portion of Kotani '560 (col. 7, line 17-22) is also quoted to bolster the position that these references are directed to compositions for the preservation of foods and are directed to non-analogous art. These arguments have been carefully considered but are unpersuasive mostly for the same reasons noted in the prior office action. In particular, it is again submitted that the Kotani et al. patents are fundamentally directed to improving the gas barrier properties in gas barrier resin compositions (and in fact it is again expressly indicated in each of these patents that they are not limited to food applications). Further, the use of the film material in Kaido et al. is expressly as an "air permeation prevention layer" that is a replacement for the normally used butyl rubber (e.g. col. 1, lines 38-56, col. 2, lines 9-65) and by virtue of the reduced permeation of the resin, the tire weight can be reduced while maintaining required permeation resistance. Teachings relating to improving the gas barrier properties of a resin would therefore have been seen by the ordinary artisan as reasonably pertinent to tires that can use the same resins as the air permeation

prevention layer of a tire precisely for their good gas barrier properties. That is, a known method by which the gas barrier properties in films made of the same resin composition as Kaido et al. (i.e. the Kotani et al. teachings) would therefore have been seen by the ordinary artisan as highly desirable and would have been expected to provide predictable improvements in the permeation resistance of a tire using such. In other words, it is submitted that the ordinary artisan, following the teachings of Kaido et al. to provide a barrier resin film layer in a tire so as to provide gas barrier properties to the tire (and allow the tire to thereby be lightened), would have been strongly motivated to apply teachings with respect to known ways to enhance the gas barrier properties in films made of the same resin composition. More specifically, given that Kaido et al. desires a resin that provides high gas barrier properties, it would have been obvious to adopt a known resin system that includes the layered filler as claimed for the Kaido et al. tire in light of the teachings of the Kotani et al. patents that such provides an improvement in gas barrier properties, which properties would clearly have been seen as desirable in a tire built following the Kaido et al. teachings. Only the expected and predictable results would therefore be achieved.

With respect to the argument that the Kotani references would have been seen as limited to food preservation, as noted in the last office action, they are not so limited. Note again for example cols. 19-20 of Kotani et al. '093 which clearly indicate that the main inventive feature is the composition/film itself and its desirable properties, col. 20, lines 12+ further clearly suggesting to the artisan broad applicability beyond simply food packaging. Similar teachings are provided in Kotani '560 - (e.g. "the resin composition

of this invention can be used in various forms in a wide field" (col. 11, lines 26-28)).

Given these specific teachings of very desirable gas barrier properties while retaining e.g. film strength (e.g. abstract of Kotani et al. '093), it is not unreasonable to expect the ordinary artisan to understand and expect such teachings to have application to known resin based tire liner layers formed from the same types of films with an expectation of further enhancing the gas barrier properties. In other words, given that a main reason to use the resin film layer in the tire is *for its higher gas barrier properties*, it is not seen why the artisan would ignore teachings suggesting how to further enhance the gas barrier properties of the same resin materials (e.g. polyvinyl alcohol, EVOH).

The declaration under 37 CFR 1.132 filed 9-10-2007 has also been carefully considered, this declaration being principally applied to provide evidence that "the air permeability coefficient, rate of decrease in pressure and rate of decrease in tire pressure after machining are all substantially deteriorated when an inorganic layered compound is not contained in a gas barrier layer." It is submitted however that this reduction in air permeability, pressure loss, etc. would have been entirely expected and predictable given the teachings of the Kotani references with respect to improvements in gas permeability - note that the Kotani references expressly teach that significant improvement in barrier properties are provided by using the resin with layered clay - e.g. note the examples in each reference as well as esp. col. 10, lines 53+ of Kotani '560 and col. 19, lines 35-38 of Kotani '093.

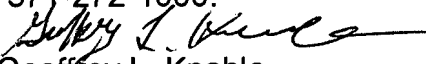
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Geoffrey L. Knable whose telephone number is 571-272-1220. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Geoffrey L. Knable
Primary Examiner
Art Unit 1791

G. Knable
November 23, 2007